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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,019	12/21/2000	Debra Bernstein	10559-268001/ P9023	3295
20985	7590	12/23/2004		
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			EXAMINER RAMPURIA, SATISH	
			ART UNIT	PAPER NUMBER
			2124	
DATE MAILED: 12/23/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/747,019	<b>Applicant(s)</b> BERNSTEIN ET AL.	
	<b>Examiner</b> Satish S. Rampuria	<b>Art Unit</b> 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***DETAILED ACTION***

1. This action is in response to the application filed on 12/21/2000.
2. Claims 22-33 are pending.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 22-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are non-statutory because they recite software components of debugging an application, representing functional descriptive material without a computer readable medium or computer implemented, program per se are not tangibly embodied. Claims 22-27 thus amounts to only abstract idea and are nonstatutory.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 22-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,378,125 to Bates (hereinafter called Bates) in view of US Patent No. 5,815,714 to Shridhar et al. (hereinafter called Shridhar).

**Per claim 22:**

Bates disclose:

- in parallel hardware threads executing in a processor comprising a plurality of microengines (Abstract, "A computer system... method to facilitate debugging of multi-threaded computer program"), receiving a source code line to be break pointed in a selected microengine (col. 1, lines 44-47 "once the break point is reached... program is halted... steps through... instructions... step operation");

Bates does not explicitly disclose determining whether the source code line can be break pointed; if the source code line can be break pointed, identifying the selected microengine to insert a break point into, which microengine threads to enable breakpoints for, and which microengines to stop if a break point occurs; and if the source code line cannot be break pointed, signaling an error.

However, Shridhar discloses in an analogous computer system determining whether the source code line can be break pointed (col. 6, lines 19-21 "decoder... determines.. if there is an embedded debug command present in the source code line"); if the source code line can be break pointed (col. 6, lines 44-46 "if there is a "HALT" at the end of the debug command"), identifying the selected microengine to insert a break point into (col. 5, lines 64-66 "determines the type of debug command... generates... break point"), which microengine threads to enable breakpoints

for, and which microengines to stop if a break point occurs (col. 5, lines 17-26 "Break point commands... "HALT" commands, which result in the termination of the simulation... and "CONT" commands which performs a debug function as directed..."); and if the source code line cannot be break pointed, signaling an error. (col. 5, lines 20-22 "HALT commands... termination of simulation... due to... serious errors").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of determining the break point code and if found insert the break point as taught by Shridhar into corresponds to the method of debugging multithreaded computer programs as taught by Bates. The modification would be obvious because of one of ordinary skill in the art would be motivated to determine the break point and insert the breakpoint to eliminate the manual manipulation for better performance as suggested by Shridhar (col. 1 and 2, lines 52-67 and 1-16).

**Per claim 23:**

The rejection of claim 22 is incorporated, and further, Bates disclose:

- wherein identifying further comprises generating a break point routine by modifying a template of instructions stored in a debug library (col. 7, lines 34-37 "The breakpoint manager routine ... would be performing... corresponding action... regard to the breakpoint table (library)").

**Per claim 24:**

The rejection of claim 23 is incorporated, and further, Bates disclose:

- wherein identifying further comprises inserting a break point at the source code line and a branch to the source code line (col. 3, lines 32-34 "Thread identification... break points... user inserted interruptions to program execution" and col. 7, lines 66-67 "the received thread identifier is compared with each thread identification control point see in the received thread has hit one of the thread identification control point").

**Per claim 25:**

The rejection of claim 24 is incorporated, and further, Bates disclose:

- executing the parallel hardware threads until the break point is encountered (col. 6, lines 11-14 "break point routine... hitting (encountered) break point... determination is made... whether... system... contained... the break point table"); and
- executing the break point routine(col. 6, lines 44 "break point routine"), the break point routine stopping selected threads (col. 5, lines 6-7 "resumes execution of the program") and determining which microengine sent an interrupt (col. 5, lines 15-16 "as required in order to determine what type of control point was encountered and the associated processing").

**Per claim 26:**

The rejection of claim 25 is incorporated, and further, Bates disclose:

- displaying program information to a user (col. 10, lines 3-6 "FIG. 8, a graphical user interface is illustrated showing a portion of computer program").

**Per claim 27:**

The rejection of claim 26 is incorporated, and further, Bates disclose:

- resuming execution of the parallel threads in response to a user input (col. 5, lines 6-7 "user provides an input that resumes execution of the program").

**Claims 28-33** are the system claim corresponding to method claims 22-27 respectively, and rejected under the same rational set forth in connection with the rejection of claims 22-27 respectively, above.

***Response to Arguments***

7. Applicant's arguments with respect to claims 22 and 28 have been considered but are moot in view of new ground(s) of rejection.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is **(571) 272-3732**.

The examiner can normally be reached on **8:30 am to 6:00 pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Kakali Chaki** can be reached on **(571) 272-3719**. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2124

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Satish S. Rampuria  
Patent Examiner  
Art Unit 2124  
12/13/2004

*Kakali Chaki*

**KAKALI CHAKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100**